

# Claims

- [c1] 1. A method for forming an electronic structure, comprising the steps of:  
forming at least two vias in a first dielectric layer;  
filling the two vias with a first self-passivated electrically conducting material;  
forming a fuse link layer on top of the first dielectric layer, the fuse link layer comprising a second material having a characteristic of changing its electrical resistance after being exposed to a laser beam;  
forming a mesa layer over the fuse link layer, the mesa layer comprising a third self-passivated electrically conducting material; and  
forming a fuse link and two mesas from the fuse link layer and the mesa layer, respectively, wherein the fuse link electrically connects the two vias, and the two mesas are directly over the two vias.
- [c2] 2. The method of claim 1, wherein the second material comprises a substance selected from the group consisting of TaN, TiN, and WN.
- [c3] 3. The method of claim 1, wherein the first self-passivated electrically conducting material comprises a

substance selected from the group consisting of Al and W.

- [c4] 4. The method of claim 1, wherein the third self-passivated electrically conducting material comprises a substance selected from the group consisting of Al and W.
- [c5] 5. The method of claim 1, further comprising the step of forming a second dielectric layer on top of the fuse link layer before forming the mesa layer.
- [c6] 6. The method of claim 1, further comprising the step of exposing the fuse link to an ambient atmosphere after the fuse link is formed.
- [c7] 7. An electronic structure, comprising:
  - a first dielectric layer having at least two vias filled with a first self-passivated electrically conducting material;
  - a fuse link on top of the first dielectric layer, the fuse link electrically connecting the two vias and comprising a second material having a characteristic of changing its electrical resistance after being exposed to a laser beam;
  - and
  - two mesas over the fuse link and directly over the two vias, the two mesas each comprising a third self-passivated electrically conducting material.

- [c8] 8. The electronic structure of claim 7, further comprising a second dielectric layer over the fuse link and beneath the two mesas, but not completely covering the fuse link.
- [c9] 9. The electronic structure of claim 7, wherein the second material comprises a substance selected from the group consisting of TaN, TiN, and WN.
- [c10] 10. The electronic structure of claim 7, wherein the first self-passivated electrically conducting material comprises a substance selected from the group consisting of Al and W.
- [c11] 11. The electronic structure of claim 7, wherein the third self-passivated electrically conducting material comprises a substance selected from the group consisting of Al and W.
- [c12] 12. A method for programming a laser fuse, the laser fuse having a fuse link comprising a material having a characteristic of changing its electrical resistance after being exposed to a laser beam, the method comprising the steps of:  
providing the fuse link; and  
directing the laser beam to the fuse link, the laser beam being controlled such that, in response to the impact of the laser beam upon the fuse link, the electrical resis-

tance of the fuse link changes but the fuse link is not blown off.

- [c13] 13. The method of claim 12, further comprising the step of sensing the change of electrical resistance of the fuse link and converting the electrical resistance change to a digital signal.
- [c14] 14. The method of claim 12, wherein the material has the characteristic of increasing its electrical resistance after being exposed to the laser beam.
- [c15] 15. The method of claim 12, wherein the material has the characteristic of decreasing its electrical resistance after being exposed to the laser beam.
- [c16] 16. The method of claim 12, wherein the material is self-passivated.
- [c17] 17. The method of claim 12, wherein the material comprises a substance selected in the group consisting of TaN, TiN, and WN.
- [c18] 18. An electronic structure, comprising:
  - a first dielectric layer having at least a first via and a second via both filled with a first electrically conducting material;
  - a first oxygen-getter shield and a second oxygen-getter

shield being directly above and in physical contact with the first electrically conducting material in the first and second vias, respectively, the first and second oxygen-getter shields comprising a second electrically conducting, oxygen-getter material; and  
a fuse link electrically connecting the first and second oxygen-getter shields, the fuse link comprising a third material having a characteristic of changing its electrical resistance after being exposed to a laser beam.

[c19] 19. The electronic structure of claim 18, further comprising a first mesa and a second mesa being directly over and in direct physical contact with the first and second oxygen-getter shields, respectively, the first and second mesas comprising a fourth electrically conducting material.

[c20] 20. The electronic structure of claim 18, wherein the second electrically conducting, oxygen-getter material comprises titanium.